

1.1 Radio Astronomy

1.1.1 Maintenance and Calibration

- K-band Research & Development equipment rack has been moved to its definitive location at the 300 room, besides the MarkIV data acquisition terminal. Documentation updated.
- Q-band commissioning phase continued: measurements of methanol line at different calibrators, measured the antenna beam at different elevations to investigate the low efficiency cause (DSS54 ANTICAL Q DOY 166).
- Continued the development and testing of several TDN connection blocks to support VLBI observations.

1.1.2 RA meetings, Training courses and Outreach activities



Because of the IYA09 celebration Susana Villalba (MDSCC s/w department), Juan Angel Vaquerizo (PARTNeR) and CGM imparted an outreach talk about MDSCC at the Robledo de Chavela town hall on May 28th (left). A start party (right) with 13 telescopes was organized on May 29th at the Robledo de Chavela primary school with the participation of more than 500 students and parents.

CGM and EMOLL attended the “Science and Technology of Long Baseline Real-Time Interferometry: The 8th International e-VLBI Workshop”, 22-26 June, Madrid, Spain (<http://www.oan.es/expres09/>). EVN is very interested in MDSCC participation in the e-EVN monthly observations mostly at 7mm, but our connection to RedIRIS (Spanish NREN) is very limited (only 100Mbps). Currently 6 EVN telescopes are connected to JIVE correlator with 1Gbps connection.

CGM visited JPL for 2 weeks, attended the CASPER JPL workshop and the 214th AAS meeting in Pasadena. Several meetings were held with GAVRT responsible to increase collaboration with PARTNeR. An IYA09 outreach event is also being planned for the end of the year with the participation of the 3 DSN complexes, GAVRT and PARTNeR. Several meetings were held with the ATOT group to plan the upgrade of the DSN K-band wide-band receivers and their future scientific applications.

1.1.3 Observations

1.1.3.1 Host Country Spectroscopy

During this month spectroscopy observations with DSS-63 stopped due to the scheduled downtime. DSS-54 Q-band commissioning phase was resumed. Q-band spectroscopy observations with DSS-54 antenna were carried out using the SPB500 spectrometer, the MarkIV data acquisition terminal, and it was developed a TDN connection block to perform position switching integrations. WVSR was also used as spectrometer.

DOY	minutes scheduled	minutes used	Percent good data	Activity	comments
155	330	170	90	"GBRA H/C D54-Qcomissioning"	OK

1.1.3.2 Interferometry

MDSCC participated in 2 Very Long Baseline Interferometric (VLBI) observations (1680 min in total):

- RFC Clock Synchronization on DSS-65 (1 observation; 240 min): 100% data collected; performance of the system nominal.
- RFC Catalog M&E S/X on DSS-65 (1 observation; 1440 min): 1 source lost (out of 986 sources) due to minor antenna problems (DR#M105398). First successful 224Mbps recording using the 4MHz VC filters.